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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,900	07/03/2003	Yossi Bar-Erez	1529/28	3606

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EXAMINER

HAWKINS, CHERYL N

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/611,900	Applicant(s) BAR-EREZ ET AL.	
	Examiner Cheryl N Hawkins	Art Unit 1734	

S.C.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/22/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the preambles of Claims 1, 18, and 20, the applicant states that the invention is directed to a system, however the applicant includes method steps in the independent and dependent claims. It is unclear as to whether the applicant's invention is a system or a method. For the purposes of examination, it will be assumed that the applicant's claimed invention is a method.

3. Claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In lines 3-4 of Claim 11, the applicant refers to "a second group of said residue elements". It is unclear as to whether a first group of residue elements exists and, if so, what properties of the first group of residue elements distinguish it from the second group as claimed. For the purposes of examination, it will be assumed that there are two groups of residue elements.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Cartmell et al. (US 4,699,679). Cartmell et al. discloses a method for constructing a three-dimensional object by selective attachment of a plurality of sheets of flexible material, each sheet being cut along at least one contour line so as to subdivide the sheet into at least one object forming region corresponding to the shape of a layer of the object bounded by a corresponding contour of the object and at least one residue region not required in the constructed object, at least part of each object forming region being attached to object forming regions of adjacent layer, the method including a step for facilitating the removal of the residue regions of adjacent sheets in such a manner as to form, from at least part of the residue regions of a plurality of the sheets, a plurality of residue elements non-rigidly interconnected such that manual removal of each of the residue elements initiates removal of a subsequent one of the residue elements (Figure 4; column 7, lines 28-38).

As to Claim 4, Cartmell et al. discloses a method in which each one of at least a first group of residue elements assumes a flat form extending substantially parallel to the sheets (Figure 4).

As to Claim 5, Cartmell et al. discloses a method in which the selective attachment is configured such that each one of the first group of residue elements is formed from a plurality of

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residue regions attached to each other over a major part of their area (Figure 4; column 6, lines 55-61).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Berg, Jr. et al. (US 5,520,308) and Craig et al. (US 6,286,712). The admitted prior art discloses current systems for constructing a three-dimensional object by selective attachment of a plurality of sheets of flexible material, each sheet being cut along at least one contour line so as to subdivide the sheet into at least one object forming region and corresponding to the shape of a layer of the object bounded by a corresponding contour of the object and at least one residue region not required in the constructed object, at least part of each object forming region being attached to object forming regions of adjacent layers. The admitted prior art also discloses that the current commercial systems result in the object being surrounded and/or filled with numerous sheets of residue material which must be removed manually (page 1 of the specification, lines 6-22; page 2 of the specification, lines 1-19); the laborious and time consuming nature of this system would have been readily apparent to one of ordinary skill in the art. The admitted prior art does not disclose a method for facilitating the removal of the residue regions. Berg, Jr. et al. (abstract; Figures 3A-3E; column 3, lines 25-30) and Craig et al. (abstract; column 1, lines 54-

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61) disclose methods for facilitating the removal of sheet materials comprising producing selective attachment of at least part of a plurality of sheets to adjacent sheets in such as manner as to form a plurality of sheets non-rigidly interconnected such that manual removal of each of the sheets initiates removal of a subsequent one of the sheets. It would have been obvious to one of ordinary skill in the art at the time of the invention to facilitate the removal of the residue sheet materials of the admitted prior art by adhesively attaching the separate residue elements to adjacent residue elements as suggested by Berg, Jr. et al. and Craig et al. to yield a method in which the residue elements can be quickly removed thereby decreasing production time for the three-dimensional object.

8. Claims 2 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Berg, Jr. et al. (US 5,520,308), and Craig et al. (US 6,286,712) as applied to claim 1 above, and further in view of Feygin et al. (US 5,876,550). As to Claim 2, the references as combined do not disclose a method including selectively cutting a plurality of residue regions of at least some of the sheets along at least one separation line. Feygin et al. discloses a method which includes selectively cutting a plurality of residue regions of least some of the sheets along at least one separation line to permit easier removal of the residue regions after construction of a three-dimensional object (column 19, lines 1-4; Figure 29; column 20, lines 37-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of the references as combined to include a step for selectively cutting the sheets of the residue regions along at least one separation line as suggested by Feygin et al. to permit easier removal of the residue regions.

As to Claim 11, the references as combined do not disclose selectively cutting a plurality of residue regions of at least some of the sheets along at least one separation line such that the residue elements assume a flat form extending perpendicular to the sheets forming the three-dimensional object. Feygin et al. discloses a method which includes selectively cutting a plurality of residue regions of at least some of the sheets into a plurality of squares or other 3-dimensional shapes using separation lines to permit easier removal of the residue regions after construction of a three-dimensional object (column 20, lines 45-50; Figure 29). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of the references as combined to include a step for selectively cutting the sheets of the residue regions along at least one separation line such that the residue elements assume a flat form extending perpendicular to the sheets forming the three-dimensional object as suggested by Feygin et al. to permit easier removal of the residue regions.

As to Claim 12, the references as combined (see Craig et al.) disclose a method which includes attaching the residue elements to each other in an interconnected Z-fold arrangement (Figure 18; column 2, lines 46-48).

As to Claim 13, the references as combined (see Craig et al.) disclose a method which includes attaching residue elements to each other so that they are interconnected over no more than a third of their area of overlap (Figure 4).

As to Claim 14, the references as combined do not disclose a method which includes selectively cutting a plurality of residue regions of at least some of the sheets along at least one separation line such that the residue elements are subdivided by the separation line into a rectangular strip. Feygin et al. discloses a method which includes selectively cutting a plurality

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of residue regions of least some of the sheets into a plurality of squares or other 3-dimensional shapes using separation lines (column 20, lines 45-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of the references as combined to include selectively cutting the sheets of the residue regions into rectangular strips, i.e. strips having a maximum transverse dimension W no more than a third of the maximum dimension L, using separation lines as suggested by Feygin et al. to permit easier removal of the residue regions after the construction of the three-dimensional object.

9. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Berg, Jr. et al. (US 5,520,308), and Craig et al. (US 6,286,712) as applied to claim 1 above, and further in view of Bar-Erez (WO 9934976). The references as combined are silent as to a method wherein the residue elements have a flat form extending parallel to the sheets forming the three-dimensional object. Bar-Erez discloses a method for making three-dimensional objects in which the residue elements having a flat form extending parallel to the sheets forming the object (Figures 3a, 3b, 3c; page 11, lines 1-5). When using the method of the references as combined to construct a three-dimensional object, it would have been readily apparent to one of ordinary skill in the art at the time of the invention that the residue elements would have a flat form similar to the residue regions disclosed by Bar-Erez.

As to Claim 5, the references as combined (see Craig et al.) disclose a method which includes attaching the residue elements to each other over a major portion of their area (Figure 4).

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As to Claim 6, the references as combined (see Craig et al.) disclose a method which includes attaching the residue elements to each other in an interconnected Z-fold arrangement (Figure 18; column 2, lines 46-48).

As to Claim 7, the references as combined (see Craig et al.) disclose a method which includes attaching residue elements to each other so that they are interconnected over no more than a third of their area of overlap (Figure 4).

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Berg, Jr. et al. (US 5,520,308), Craig et al. (US 6,286,712), and Bar-Erez (WO 9934976) as applied to claim 4 above, and further in view of Feygin et al. (US 5,876,550). The references as combined do not disclose a method which includes selectively cutting a plurality of residue regions of at least some of the sheets along at least one separation line such that the residue elements are subdivided by the separation line into a rectangular strip. Feygin et al. discloses a method which includes selectively cutting a plurality of residue regions of least some of the sheets into a plurality of squares or other 3-dimensional shapes using separation lines (column 20, lines 45-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of the references as combined to include selectively cutting the sheets of the residue regions into rectangular strips, i.e. strips having a maximum transverse dimension W no more than a third of the maximum dimension L, using separation lines as suggested by Feygin et al. to permit easier removal of the residue regions after the construction of the three-dimensional object.

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11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Berg, Jr. et al. (US 5,520,308), Craig et al. (US 6,286,712), and Feygin et al. (US 5,876,550). The admitted prior art discloses current systems for constructing a three-dimensional object by selective attachment of a plurality of sheets of flexible material, each sheet being cut along at least one contour line so as to subdivide the sheet into at least one object forming region and corresponding to the shape of a layer of the object bounded by a corresponding contour of the object and at least one residue region not required in the constructed object, at least part of each object forming region being attached to object forming regions of adjacent layers. The admitted prior art also discloses that the current commercial systems result in the object being surrounded and/or filled with numerous sheets of residue material which must be removed manually (page 1 of the specification, lines 6-22; page 2 of the specification, lines 1-19); the laborious and time consuming nature of this system would have been readily apparent to one of ordinary skill in the art. The admitted prior art does not disclose a method for facilitating the removal of the residue regions. Berg, Jr. et al. (abstract; Figures 3A-3E; column 3, lines 25-30) and Craig et al. (abstract; column 1, lines 54-61) disclose methods for facilitating the removal of sheet materials comprising producing selective attachment of at least part of a plurality of sheets to adjacent sheets in such a manner as to form a plurality of sheets non-rigidly interconnected such that manual removal of each of the sheets initiates removal of a subsequent one of the sheets. It would have been obvious to one of ordinary skill in the art at the time of the invention to facilitate the removal of the residue sheet materials of the admitted prior art by adhesively attaching the separate residue elements to adjacent residue elements as suggested by Berg, Jr. et al. and Craig et al. to yield a method in which the residue elements can

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be quickly removed thereby decreasing production time for the three-dimensional object. Also, the admitted prior art does not disclose a method including selectively cutting a plurality of residue regions of at least some of the sheets along at least one separation line. Feygin et al. discloses a method which includes selectively cutting a plurality of residue regions of least some of the sheets along at least one separation line to permit easier removal of the residue regions after construction of a three-dimensional object (column 19, lines 1-4; Figure 29; column 20, lines 37-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of the references as combined to include a step for selectively cutting the sheets of the residue regions along at least one separation line as suggested by Feygin et al. to permit easier removal of the residue regions.

Double Patenting

12. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

13. Claim 3 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

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14. Claim 9 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 14 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

15. Claim 10 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 15 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

16. Claim 15 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 16 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

17. Claim 16 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 17 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

18. Claims 17 and 20 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 13 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

19. Claim 19 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 12 of prior U.S. Patent No. 6,602,377. This is a double patenting rejection.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl N Hawkins whose telephone number is (571) 272-1229. The examiner can normally be reached on 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A Fiorilla can be reached on (517) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheryl N. Hawkins
September 23, 2004


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SUPERVISORY PATENT EXAMINER
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